

REMARKS

Claims 1, 3, 7-15, 17-22, and 24-46 are pending in this application.

The remarks below are in response to the final Office action mailed September 22, 2009.

Response to Claim Rejections

Claim 1

Claim 1 is directed to a single-layer absorbent structure that comprises:

a first surface opposite a second surface, wherein the single-layer absorbent structure lies flat in a dry state and expands along the second surface in the presence of a liquid so that the first surface increases concavity, wherein a pocket-like shape is formed in the presence of the liquid, the single-layer absorbent structure expands to a lesser extent along the first surface than the single-layer absorbent structure expands along the second surface in the presence of the liquid, the single-layer absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater, and the single-layer absorbent structure has a thickness of about 10 millimeters or less in a dry state.

Claim 1 is submitted to be unanticipated by, non-obvious in view of and patentable over the references of record and in particular Suzuki et al. (JP 2003-033381), in that whether considered alone or in combination the references fail to show, suggest, or otherwise render obvious a single-layer absorbent article that lies flat in a dry state and expands

along a second surface in the presence of a liquid so that an opposite first surface increases concavity.

As a first matter, Applicants respectfully submit that reliance on the machine translation of Suzuki et al. is improper. M.P.E.P § 706.02 II requires that:

[t]o determine whether both the abstract and the underlying document are prior art, a copy of the underlying document must be obtained and analyzed. If the document is in a language other than English and the examiner seeks to rely on that document, a translation must be obtained so that the record is clear as to the precise facts the examiner is relying upon in support of the rejection.

The machine translation of Suzuki et al. is unclear and difficult to comprehend. Moreover, the machine translation of Suzuki et al. provided by the JPO prefaces the translation by stating "[t]his document has been translated by computer. So the translation may not reflect the original precisely." Reliance on the machine translation of Suzuki et al. in the rejection is thus improper. Use of the machine translation in the rejection necessarily makes it unclear which facts the examiner is relying upon in the rejection. If the Examiner maintains her rejection in view of Suzuki et al., Applicants respectfully request she obtain an accurate, clear translation of Suzuki et al.

As best understood by Applicants, Suzuki et al. is directed to a sheet-like absorption body having recessed and protruding parts and a self three-dimensionalizing function, which forms the recessed and protruding parts having a 2A mm step between the recessed and protruding parts. After absorbing water, when the step between the recessed and protruded parts is A mm when in a dry state. Specifically,

the absorption body includes a P sheet made from nonwoven fabrics, cotton fabrics, and the like bonded to a Q sheet made from a nonwoven fabric. In one embodiment, the P sheet further includes superabsorbent polymers. Upon being wetted with water, the P sheet expands, thereby forming a concavo-convex structure.

Notably, however, with respect to claim 1, Suzuki et al. fail to disclose an absorbent structure that lies flat when in a dry state.

Specifically, as used in the instant specification, the absorbent structure is a flat planar material in the dry state¹. Furthermore, as defined by Merriam-Webster, "flat" refers to a material that has "a continuous horizontal surface; being or characterized by a horizontal line or tracing without peaks or depressions (emphasis added); having a relatively smooth or even surface."² Furthermore, "planar" is defined as "of, relating to, or lying in a plane; two-dimensional in quality"³, and "plane" is defined as "a surface in which if any two points are chosen a straight line joining them lies wholly in that surface."⁴

By contrast, however, as shown in the Drawings, the P sheet in Suzuki et al. has one or more crevices (i.e., peaks and or depressions) and consequently does not lie flat in the dry state⁵. Quite to the contrary, the P sheet of Suzuki et al. and the crevices formed therein, which are formed by standing/folding the ends of the P sheet and Q sheet up in

¹ See, e.g., paragraphs [0001] and [0048] of the published application.

² Merriam-Webster Online, available at <http://www.merriam-webster.com/dictionary/flat>.

³ *Id.*, available at <http://www.merriam-webster.com/dictionary/planar>.

⁴ *Id.*, available at <http://www.merriam-webster.com/dictionary/plane>.

⁵ See, e.g., Suzuki et al. at Drawings 2, 4, 6, 8, 10, and 12.

the vertical direction (see, e.g., Drawings 8 and 10), or by joining the P sheet and Q sheet intermittently (see, e.g., Drawings 6 and 12). As such, Suzuki et al. fail to teach each and every element of Applicants' claimed invention, and thus, cannot be said to anticipate Applicants' claim 1 under 35 U.S.C. §102(b).

The Office continues to rely on Drawing 10 of Suzuki et al. as purportedly teaching that the absorbent structure lies flat in a dry state. However, Drawing 10 of Suzuki et al. teaches a folded article that does not lie flat in a dry state. Quite to the contrary, two visible folds are shown in Drawing 10 and referred to in Suzuki et al. as "another example of formation of a crevice and heights in the sheet-like absorber of this invention."⁶

The Office now contends at page 2 of the final Office action "that it is clear from Fig. 10 of Suzuki that the article with folded walls is planar and thus lies flat in a dry state." Applicants respectfully disagree. As discussed above, "planar" is defined as "of, relating to, or lying in a plane; two-dimensional in quality."⁷ The folding of the walls of Suzuki et al. result in the structure not being planar because of the increased-height of the folded portions of the walls with respect to the rest of the structure. The folded portions of the walls lie outside of the plane of the rest of the structure and the structure is thus not properly characterized as planar. Accordingly, Drawing 10 of Suzuki et al. fails to show an article that lies flat in a dry state, and instead shows an article having the exact opposite

⁶ See, paragraph 53 and Drawing 10.

⁷ *Id.*, available at <http://www.merriam-webster.com/dictionary/planar>.

features - an article that has crevices and heights in a dry state and thus does not lie flat.

Moreover, the Office goes on to assert that "[a]pplicant clearly concurs with the examiner's position that a planar structure is equivalent in meaning to 'lying flat' as applicant equates the two concepts in the remarks at page 16." Applicants do not concur with the Office's position. As described above, "planar" and "flat" are distinct terms having corresponding distinct definitions. Applicants have in no way proposed that the two are equivalent in meaning.

Additionally, it would not have been obvious to modify Suzuki et al. to arrive at an absorbent structure that lies flat in the dry state as recited in Applicants' claim 1. Specifically, as noted above, nowhere in Suzuki et al. is it taught or suggested to form a flat, (e.g., planar) sheet-like absorbent structure. More particularly, as suggested in Suzuki et al., the crevice and height arrangement (even the dry state) functions as an anti-leak barrier for preventing leakage from the edge of the absorbent product upon wetting, and thus, Suzuki et al. actually teaches away from using a flat, planar absorbent structure even in the dry state. For example, as shown in Drawing 10 of Suzuki et al., the height portions of the absorbent structure function as anti-leak barrier to prevent leakage from the edge. By modifying Suzuki et al. to lie substantially flat (i.e., eliminating the height portion), the anti-leak barrier function of the absorbent structure would be destroyed and thus render Suzuki et al. unfit for its intended purpose.

For all of the above reasons, Applicants submit that claim 1 is unanticipated by, nonobvious in view of, and patentable over the references of record.

Claims 3, 7-15, and 46 depend directly or indirectly from claim 1 and are submitted to patentable over the references of record for at least the same reasons as claim 1.

Claim 41

Claim 41 is directed to a single-layer absorbent structure comprising:

a first surface opposite a second surface, wherein the absorbent structure lies flat in a dry state and expands along the second surface in the presence of a liquid so that the first surface increases concavity, wherein a pocket-like shape is formed in the presence of the liquid, the single-layer absorbent structure expands to a lesser extent along the first surface than the single-layer absorbent structure expands along the second surface in the presence of the liquid, the single-layer absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater, and at least one of the first and second surfaces undergoes anisotropic expansion in the presence of the liquid.

Claim 41 is submitted to be unanticipated by, non-obvious in view of, and patentable over the references of record and in particular Suzuki et al., for substantially the same reasons as claim 1, in that whether considered alone or in combination the references fail to show, suggest, or otherwise render obvious a single-layer absorbent article

that lies flat in a dry state and expands along a second surface in the presence of a liquid so that an opposite first surface increases concavity.

For the reasons above, Applicants submit that claim 41 is unanticipated by, nonobvious in view of, and patentable over the references of record.

Claim 17

Claim 17 is directed to an absorbent structure positioned between a bodyside liner and an outer cover, the absorbent structure comprising:

a first layer that expands less than 10% in the presence of a liquid, wherein the first layer is positioned adjacent the bodyside liner; and

an absorbent second layer comprising polyurethane foam and having a basis weight between about 100 and about 1000 grams per square meter bonded to the first layer, wherein the absorbent second layer expands at least 20% in the presence of the liquid so that the second layer increases concavity, wherein a pock-like shape is formed along an interface of the first and second layers in the presence of the liquid, wherein the absorbent second layer is positioned adjacent the outer cover, and the absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater.

Claim 17 is submitted to be nonobvious in view of and patentable over the references of record, and in particular Suzuki et al. and U.S. Patent No. 6,667,424 (Hamilton et al.), in that whether considered alone or in combination the references fail to show, suggest, or otherwise render obvious an absorbent structure having a first layer positioned adjacent a bodyside liner, an absorbent second layer

comprising polyurethane foam positioned adjacent an outer cover, and wherein the absorbent second layer expands at least 20% in the presence of liquid so that the second layer increases concavity and wherein a pocket-like shape is formed along an interface of the first and second layers in the presence of liquid.

Hamilton et al. is generally directed to absorbent articles comprising fibrous nits and other free-flowing particles. An absorbent article of Hamilton et al. includes free-flowing particles in a central portion which, in conjunction with other absorbent members, provide improved body fit and fluid handling performance. Increased leakage control is provided by the combined effect of good intake and fluid handling performance of the fibrous nits coupled with a wicking barrier between the nits and longitudinal sides of the article. A central rising member can further enhance the topography of the article when compressed by urging the portion comprising nits to deflect vertically upward. Notably, Hamilton et al. is not relied upon to cure the deficiencies of Suzuki et al. described below and nor does it do so.

As discussed above, Suzuki et al. contains a P sheet bonded to a Q sheet. The P sheet faces the wearer of the article and the Q sheet is positioned opposite the P sheet and faces outward from the wearer. Upon coming into contact with liquids, the P sheet expands inward towards the wearer, and away from the Q sheet. In contrast to Suzuki et al., claim 17 recites an expanding absorbent structure having an expanding absorbent layer positioned adjacent the outer cover. The disclosure of Suzuki et al. thus teaches

construction of an article that functions according to the exact opposite principle of claim 17 by requiring that body-facing P sheet expand upon contact with liquid.

The Office now contends at page 3 of the Office action that "[w]hile it is true that layer P is the layer which expands more, examiner did not find any distinction in the Suzuki specification or drawings dictating which side of the article the structure is placed in would face a bodyside liner and which would face an outer cover." The Office went on to contend that the P sheet and Q sheet are not shown in the drawings of Suzuki et al. Applicants respectfully disagree with both of the Office's positions and believe the Examiner's difficulty in understanding the disclosure of Suzuki et al. is a byproduct of the unclear and confusing machine translation of Suzuki et al. upon which the Examiner's rejection is based.

Suzuki et al. identifies the P sheet as reference numeral 6 and the Q sheet as reference numeral 7 throughout the specification⁸. Reference numerals 6 and 7 are shown throughout multiple drawings⁹. For example, drawing 15 shows that the P layer faces the wearer of the diaper and is inward of the Q layer. In other words, drawing 15 shows that the P sheet faces the wearer of the diaper and that the Q sheet is positioned opposite the P sheet and faces outward from the wearer.

Moreover, any modification of Suzuki et al. to teach the features of claim 17 would be improper. Such a modification of Suzuki et al. would frustrate the desired intent of Suzuki

⁸ See, e.g., Paragraph [0053]

⁹ See, Drawings 6, 8, 10-12, 15, 18, and 20

et al. by requiring that the outward facing Q sheet expand upon contact with liquids. Such expansion of the Q sheet would be in the direction away from the P sheet. As such, if the outward facing Q sheet were to expand upon such contact with liquids, the Q sheet would expand away from the wearer and fail to form a body-facing concavo-convex structure. For these reasons, claim 17 is submitted to be patentable over Suzuki et al. and Hamilton et al.

Claims 18-22, 24-29, and 44 depend directly or indirectly from claim 17 and are submitted to be patentable over the references of record for at least the same reasons as claim 17.

Claim 30

Claim 30 is directed to an absorbent article comprising:

- a body side liner;
- an outer cover; and

an absorbent structure comprising polyurethane foam and having a basis weight between about 50 and about 1000 grams per square meter positioned between the body side liner and the outer cover, wherein the absorbent structure includes a first surface opposite a second surface, the second surface of the absorbent structure is bonded to the outer cover, the absorbent structure expands along the second surface in the presence of a liquid so that the first layer increases concavity, wherein a pocket-like shape is formed in the presence of the liquid, the absorbent structure expands to a lesser extent along the first surface than the absorbent structure expands along the second surface in the presence of the liquid, and the absorbent structure has a fluid intake

rate of at least about 0.5 cubic centimeters per second or greater.

Claim 30 is submitted to be nonobvious in view of and patentable over the references of record, and in particular Suzuki et al. and Hamilton et al., for substantially the same reasons as claim 17. That is, whether considered alone or in combination the references fail to show, suggest, or otherwise render obvious an absorbent structure having a first surface opposite a second surface bonded to an outer cover, the absorbent structure expands along the second surface in the presence of a liquid, wherein the absorbent structure expands to a lesser extent along the first surface than the second surface in the presence of liquid so that the first layer increases concavity and forms a pocket-like shape.

As discussed above in relation to claim 17, Hamilton et al. is generally directed to absorbent articles comprising fibrous nits and other free-flowing particles. Notably, Hamilton et al. is not relied upon to cure the deficiencies of Suzuki et al. described below and nor does it do so.

Suzuki et al., as discussed above, contains a P sheet bonded to a Q sheet. In contrast to Suzuki et al., claim 30 recites an expanding absorbent structure that expands in the presence of a liquid along a second surface bonded to the outer cover. The disclosure of Suzuki et al. thus teaches construction of an article that functions according to the exact opposite principle of claim 30 by requiring that body-facing P sheet expand upon contact with liquid. Notably, Hamilton et al. is not relied upon to cure these deficiencies of Suzuki et al., nor does it do so.

Moreover, any modification of Suzuki et al. to teach the features of claim 30 would be improper. Such a modification of Suzuki et al. would frustrate the desired intent of Suzuki et al. by requiring that the outward facing Q sheet expand upon contact with liquids. Such expansion of the Q sheet would be in the direction away from the P sheet. As such, if the outward facing Q sheet were to expand upon such contact with liquids, the Q sheet would expand away from the wearer and fail to form a body-facing concavo-convex structure. For these reasons, claim 17 is submitted to be patentable over Suzuki et al. and Hamilton et al.

For the reasons above, Applicants submit that claim 30 is nonobvious in view of and patentable over the references of record.

Claims 31-40 and 45 depend directly or indirectly from claim 30 and are submitted to be patentable over the references of record for at least the same reasons as claim 30.

Claim 42

Claim 42 is directed to an absorbent structure comprising:

- a first layer having a basis weight between about 10 and about 150 grams per square meter that expands less than 10% in the presence of a liquid; and

- an absorbent second layer comprising polyurethane foam and bonded to the first layer, wherein the absorbent second layer lies flat in a dry state, wherein the absorbent second layer expands at least 20% in the presence of the liquid so that the second layer increases concavity, wherein a pocket-

like shape is formed along an interface of the first and second layers in the presence of the liquid, and the absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater measured using the Fluid Intake Rate Test.

Claim 42 is submitted to be nonobvious in view of, and patentable over the references of record and in particular Suzuki et al. for at least the same reasons as claim 1. That is, whether considered alone or in combination the references fail to show, suggest, or render obvious an absorbent structure having an absorbent second layer that lies flat in a dry state, wherein the absorbent second layer expands at least 20% in the presence of liquid so that it increases concavity, and wherein a pocket-like shape is formed along the interface of the first and second layers of the absorbent structure in the presence of liquid.

Hamilton et al., as described above, does not cure the deficiencies of claim 1 with respect to the failure of Suzuki et al. to teach an absorbent article that lies flat in a dry state and expands along a second surface in the presence of a liquid so that an opposite first surface increases concavity. Moreover, Hamilton et al. is not relied upon by the Office to cure these deficiencies of Suzuki et al.

For the reasons above, Applicants respectfully submit that claim 42 is nonobvious in view of and patentable over the references of record.

Claim 43

Claim 43 is directed to an absorbent structure comprising:

a first layer that expands less than 10% in the presence of a liquid; and

an absorbent second layer comprising polyurethane foam and bonded to the first layer, wherein the absorbent second layer lies flat in a dry state, wherein the absorbent second layer expands at least 20% in the presence of the liquid so that the second layer increases concavity, wherein a pocket-like shape is formed along an interface of the first and second layers in the presence of the liquid, the absorbent structure has a fluid intake rate of about 0.5 cubic centimeters per second or greater, and only one of the first and second layers is elastomeric.

Claim 43 is submitted to be nonobvious in view of and patentable over the references of record and in particular Suzuki et al. for substantially the same reasons as claim 1, in that whether considered alone or in combination the references fail to show, suggest, or render obvious an absorbent structure having an absorbent second layer that lies flat in a dry state, wherein the absorbent second layer expands at least 20% in the presence of liquid so that it increases concavity, and wherein a pocket-like shape is formed along the interface of the first and second layers of the absorbent structure in the presence of liquid.

Hamilton et al., as described above, does not cure the deficiencies of claim 1 with respect to the failure of Suzuki et al. to teach an absorbent article that lies flat in a dry state and expands along a second surface in the presence of a liquid so that an opposite first surface increases concavity. Moreover, Hamilton et al. is not relied upon by the Office to cure these deficiencies of Suzuki et al.

For the reasons above, Applicants respectfully submit that claim 43 is nonobvious in view of and patentable over the references of record.

CONCLUSION

In view of the foregoing, favorable consideration and allowance of claims 1, 3, 7-15, 17-22, and 24-46 is respectfully requested.

Applicants do not believe that any fee is due. However, the Commissioner is hereby authorized to charge any deficiency or overpayment of any fees to Deposit Account No. 01-2384.

Respectfully Submitted,

/Richard L. Bridge/

Richard L. Bridge, Reg. No. 40,529
Armstrong Teasdale, LLP
One Metropolitan Square, 26th Floor
St. Louis, Missouri 63102
314-621-5070

RLB/PEB/AGH
Via EFS